Policy & Procedure (P& P)

Policy Title :		
Preparation of Platelet Concentration		
Department	**Index No.**	**Scope**
Laboratory & Blood Bank	**LAB-059 LINKED TO LAB 056 REVEOS**	**All Blood Bank staff**
Issue Date	**Revision NO**	**Effective Date**
1437/06/10	**3**	**1441/7/19**
Review Due Date	**Related Standard NO.**	**Page Number#**
1443/7/19	**CBAHI (LB. 43)**	**5**

01. Policy:

Platelets components are prepared by separating the platelets from whole blood **within 8 hours** of collection.

02. Definition :

N/A

03. Purpose :

Separation of platelets from blood cellular component to provide it to all cases of thrombocytopenia and platelet dysfunction to protect and treat patients from bleeding.

04. Procedure :

The donation time should be complete with 15 minutes. Donor must not have been taking any anti-platelet drugs such as aspirin for 36 hours prior to donation. If aspirin have been taking < 36 hours, the unit should not be used for platelet concentrate.

04.1. Materials

04.1.1. Refrigerated centrifuge

04.1.2. Freshly collected whole blood

04.1.3. Plastic clips

04.1.4. Dielectric sealer

04.1.5. Plasma extractor

04.1.6. Balance and small weights

04.1.7. Platelet agitator (20 – 24^{0}C)

04.2. Preparation Methods

04.2.1. The unit of blood on collection should not be refrigerated but kept at room temperature preferably 22 C and separated **within 8 hours** after completion of phlebotomy.

04.2.2. The blood is centrifuged for a light spin (2600 rpm for 7 minutes) at a temperature of 22 C after which 90% plasma is expressed into a satellite pack. Seal the tubing between the main pack and the satellite packs and cut.

04.2.3. The platelet rich plasma (PRP) is then re-centrifuged – heavy spin (4000 rpm for 7 minutes) at a temperature of 22 C to concentrate the platelets.

04.2.4. The platelet supernatant plasma is expressed in a satellite bag leaving 30-50ml plasma on the platelets to maintain an acceptable pH (6.2 or higher for the entire storage period). Seal tubing and cut as before.

Preparation of the leukoreduced platelets components LR-PC

- We have to use a special platelet pooling set with WBC filter.
- Before you begin pooling and filtering the interim platelet unit IPUs , you must rest and agitate the IPUs
- Prepare the leukoreduction rack: platelet pooling sets and the patch of platelets.
- Close all the clamps on the platelet pooling set.
- Sterile connect the platelet unit to the blue striped tube, use the minimum amount of tubing needed to complete the sterile connection procedure : here we are using the WELDER machine.
- Sterile connect 4 to 6 platelet units that have been rested and agitated, to the platelet pooling set using pooling tubes.
- Hang all the platelet units bags from a single filtration hook.
- Open sterile connection seals on each pooling tube and solution line tube.
- Ensure that all lines are free of kinks or other obstructions and the leukoreduction filter hangs

vertically.

- Open the clamp on the line to the filter and allow the platelets to flow through the leukoreduction filter and into the pooled platelets storage bag.
- After filtration is complete, close all the clamps on the platelet pooling set.
- Disconnect the pooled platelet storage bag that contains the pooled platelet product from the platelet pooling set.
- Discard the empty platelet units bags and the leukoreduction filter assembly in the biohazard waste.
- Open the clamp on the line between the pooled platelet storage bag and the sample pouch and express residual air from the storage bag into the sample pouch. We can squeeze a small amount of platelet for culture and bacterial detection.
- Disconnect the sample pouch from the pooled platelet storage bag.
- Disconnect the needle on the sample pouch by the sealer, discard the needle in the sharp container and the pouch in the biohazard bag.

04.2.5. The platelet concentrate is left undisturbed for 1-1/2 hours to allow micro-aggregates to dissolve. It is then gently shaken to resuspend the platelets.

04.2.6. They are then continuously agitated in the platelet incubator at 20 – 24^{0}C. The bag is labeled as mentioned before in plasma preparation.

04.3. Expiration:

Single units: 5 days

4 hours after opening the platelet unit.

04.4. Transportation:

Platelets components are transported in properly insulated container as close as possible to **20-24 C**

04.5. Storage

04.5.1. They are stored under properly controlled conditions between **20 – 24^{0}C with continuous agitation** in the platelet incubator.

04.5.2. Do not refrigerate

04.5.3. Do not store on patient units or in operating room.

04.5.4. Platelets should be inspected before issue to ensure that no platelet aggregates are visible.

04.6. Quality Control

4.6.1. Standard platelet units

04.6.1. expired (6th day) units of platelet products checked for platelet count and PH, every month to ensure the therapeutic efficiency of the product.

04.6.2. 90% of the subjected units have a platelet count of 5.5 * 10exp10 platelets/unit or more and a minimum pH of 6.2

4.6.2. Quality control of leukoreduced platelets components: LR-PC

1% of the quarterly production of the leukoreduced platelet components **LR-PC** but not less than 12 units every 3 months are subjected to quality control testing .

All tested **LR-PC** units have a platelet recovery rate of more than 85% and a residual WBC count of less than 8.3 * 10 exp 5 WBC/unit or 5* 10 exp 6 WBC/pool of 6 units .

If results were not accepted , corrective action should be implemented.

05. Responsibilities :

All laboratory & Blood Bank staff of Al-Qunfudah General Hospital.

06. Equipment & Forms

Platelets Quality Control Records

Platelets transportation record.

07. Attachment :

Link to LAB-060 Blood components preparation using REVEOS automated blood processing System

08. Reference

The Technical manual of the American Association of Blood Banks.

The unified Practical Procedure Manual for Blood Banks in The Arab Countries

Preparation , Reviewing & Approval Box

	NAME	POSITION	SIGN & STAMP	DATE
Prepared By	Dr RAJA NACER SASSI	Head of Blood Bank		14/7/1441
Reviewed By	Dr IBRAHIM AWADH	Lab &B.Bank HOD		14/7/1441
Document Reviewed By	Dr FAISAL FALATA	TQM Director		14/7/1441
Reviewed By	Dr AHMAD BALBAID	Medical Director		14/7/1441
Approved By	Mr HASSAN ALNASHERI	Hospital Director		11/3/2020

Stamp Here
Ministry of Health وزارة الصحة
Qunfudah General Hospital مستشفى القنفذة العام
إدارة الجودة الشاملة
TQM